What Is Claimed Is:

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1. A solid-state imaging device comprising:

a plurality of pixels, including a light-sensitive portion for photoelectrically converting incident light, a transfer gate for transferring a charge stored in said light-sensitive portion, a resettable detection capacitor for storing said charge transferred from said transfer gate, and a selection switch for outputting a charge of said detection capacitor according to of a selection signal;

a charge amplifier for converting to a voltage said detection capacitor charge, which is outputted from the pixels, and a correlated double sampling circuit for obtaining a voltage difference between a reset level and a detected level converted by the charge amplifier.

2. The solid-state imaging device according to claim 1, wherein said charge amplifier is a capacitive feedback-type impedance conversion circuit.

3. The solid-state imaging device according to claim 1, wherein said charge amplifier converts to a reset voltage a reset level of said detection capacitor by said selection switch transitioning to ON, and said detection capacitor being connected to an input of said charge amplifier, and thereafter, converts to a detection signal voltage said charge, which was transferred to said

detection capacitor from said light-sensitive portion by said transfer gate transitioning to ON.

4. A solid-state imaging device comprising:

a plurality of pixels, including a light-sensitive portion for photoelectrically converting incident light and storing a charge, a reset gate connected to said light-sensitive portion, and depleting said light-sensitive portion by becoming conductive in response to a reset signal, and a transfer gate, connected to said light-sensitive portion, for outputting a charge stored in said light-sensitive portion by becoming conductive in response to a selection signal;

a charge amplifier, connected to said pixel, for converting said outputted charge to a voltage; and

a correlated double sampling circuit for sampling and holding an output voltage of said charge amplifier,

wherein a differential voltage between a reset level which said charge amplifier outputs when being reset, and a detection level, which said charge amplifier outputs in accordance with a charge outputted from said pixel, is outputted from said correlated double sampling circuit.

5. The solid-state imaging device according to claim 4, wherein said light-sensitive portion is formed by a second conductive-type cathode region, which is

formed at a prescribed depth inside a first conductive-type semiconductor region, and

said reset gate is a MOS-type transistor, which is formed by said cathode region, a reset gate electrode formed on said first conductive-type semiconductor region, and a second conductive-type drain region, which is formed inside said first conductive-type semiconductor region, and which has a higher concentration than said cathode region.

6. The solid-state imaging device according to claim 5, wherein said transfer gate is a MOS-type transistor, which is formed by said cathode region, a transfer gate electrode formed on said first conductive-type semiconductor region, and a second conductive-type output region, which is formed inside said first conductive-type semiconductor region, and which is connected to an input of said charge amplifier.

7. The solid-state imaging device according to claim 4, wherein said first conductive-type semiconductor region is formed inside a second conductive-type well region, and is controlled such that a region directly beneath said cathode region of said well region is depleted.

8. The solid-state imaging device according to

claim 5, wherein said first conductive-type semiconductor region is formed inside a second conductive-type well region, and is controlled such that a region directly beneath said cathode region of said well region is depleted.

9. The solid-state imaging device according to claim 4, wherein said reset gate maintains a quasi-conductive state while said light-sensitive portion stores a photoelectrically-converted charge.